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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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May 21, 1999

Mr. James E. Rasmussen, Director
Environmental Assurance, Permits, and Policy Division
United States Department of Energy
P.O. Box 550, MSIN: A5-15
Richland, Washington 99352

Mr. William D. Adair, Director
Fluor Daniel Hanford, Inc.
2420 Stevens Center, MSIN: H6-21
Richland, Washington 99352



Dear Messrs. Rasmussen and Adair:

Re: Notice of Deficiency Comments for the 219-S/Storage Part B Permit Application
Chapter 3 and Appendix 3A.

The Washington State Department of Ecology (Ecology) has reviewed the 219-S/Storage Part B Permit Application Chapter 3 and Appendix 3A. The areas of deficiency are itemized on the attached table. Please provide written response to Ecology's comments within two (2) months of receipt. After Ecology receives the Department of Energy (DOE) responses, the necessary comment resolution meetings will be scheduled.

Ecology requests that the following adjustments be made to the 1/19/99 version of the 219-S/Storage Part B Permit Application Review Working Draft Schedule:

- Extend the Ecology Review of Chapter 7 and Appendix 7A to June 11, 1999.

I look forward to working with your staff on the completion of this permitting effort. If you have any questions, or would like to schedule a meeting regarding this letter, please contact me at (509) 736-3003.

Sincerely,

Brenda L. Becker-Khaleel
Nuclear Waste Program

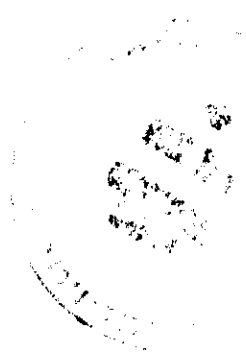
Enclosure

BB:ld

cc: John Winterhalder, WMH
Joel Williams, WMH
Russell Jim, YIN
Donna Powauke, NPT

J. R. Wilkinson, CTUIR
Mary Lou Blazek, OOE
Administrative Record: 222-S Laboratory





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Notice of Deficiency Comments
219-S Tank/Storage Permit Application
March 5, 1999

<u>Comment #</u>	<u>Comment</u>	<u>Closed on</u>
Chapter 3		
1.	Section 3.1, for waste streams stored or treated at the 219-S Waste Handling System, provide a description of <u>each</u> waste stream, its dangerous waste designation(s), and the basis for the designation.	
2.	Provide a detailed chemical, biological, and physical analysis of representative samples of the waste streams. Include the identity and concentration of all constituents and physical properties likely to affect proper waste management at the facility. The data must supply all information necessary to verify tank compatibility with each waste stream.	
3.	Describe whether the analysis provided is from published or documented data. Provide supporting documentation.	
4.	Identify each waste stream with any of the following attributes: <ul style="list-style-type: none"> • Will be managed in tanks and is acutely or chronically toxic by inhalation, • Does not contain free liquids, in neither ignitable nor reactive <u>and</u> will be stored in containers in an area without secondary containment, or • Contains no free liquids <u>and</u> it will be stored or treated in tank systems that have been exempted from WAC 173-303-640(4). 	
Appendix 3A Waste Analysis Plan		
General Comments		
5.	Keep in mind the overall purpose of the Waste Analysis Plan (WAP) is to ensure the generators' description of their waste is accurate. It is not intended to designate waste.	

6.	<p>Insufficient information was found in these areas:</p> <p>Waste identification – No waste stream identification and flow diagram for liquid waste streams. How will process knowledge be used and what percentage (10%?) will be sampled and analyzed in the laboratory. Treatment train (pH adjustment, additives, etc.), needs to be discussed, if applicable (what units will handle the waste and in what order). Discuss parameter evaluation and when it may be acceptable to eliminate a parameter that cannot be tested for. Also, dropping a parameter under prioritization.</p> <p>Sampling - Sampling equipment needs to be identified with decontamination procedures. What sampling strategies will be used...authoritative and/or random...grab and/or composite. What sampling locations will be selected. Quality control parameters for sampling need to be defined. Frequency and QC limits for field blanks, trip blanks, equipment blanks, split samples and duplicates.</p> <p>Sampling and Laboratory Quality Assurance--A Quality Assurance Plan (QAP) needs to be available in the WAP, or referenced. What procedures have been implemented to produce consistent sampling precision? Are personnel currently and properly trained?</p> <p>Laboratory Quality Control – If not covered in the QAP, what are the frequency and limits for the use of duplicates, matrix spikes, surrogate spikes and calibrations? Are detection limits low enough to meet regulatory requirements and use? Are certified reference materials used? Are Standard Operating Procedures (SOPs) available for analytical methods -- both preparation and determination phases?</p> <p>Special procedural requirements – How is waste tracked with multiple waste codes? An example waste stream fact sheet (WSFS) should be included, describing generated waste at the lab and frequency of analysis. This should determine if the labs' description of the waste is accurate.</p> <p>Multiple spelling errors were found. Spell check should be run on the next version.</p>	
7.	<p>Chapter 6 made a reference to a compatibility assessment in Chapter 3. Add a complete description of the compatibility assessment. Include who will perform the compatibility assessment and how they became qualified to perform this work.</p>	

8.	Be consistent with the use of terms throughout the permit application (e.g., container storage waste management units vs. 222-S Dangerous and Mixed Waste Storage Area, waste form vs. waste stream, etc.).	
9.	Change the term "dangerous" to "dangerous/mixed."	
Glossary/Terms		
10.	The glossary is actually an acronym list. Suggest changing title.	
11.	Add a definition for the term "Acceptable/Acceptance."	
12.	Verify all term definitions are copied correctly from the <i>Guidance for the Development of Waste Analysis Plans for TSDS within the Solid Waste Project on the Hanford Site, Ecology</i> .	
13.	Remove references to OSWER 9938.4-03. This is an EPA document over which Ecology has no control, and does not provide input for. The WAP should reference documents Ecology maintains, or restate the information in the text.	
14.	Add the definition of Designation – The process completed to determine if a solid waste is a mixed waste, resulting in the assignment of proper federal and state waste codes.	
15.	Include the Ecology 1995b, comment 181 and 182 and how it will be used in this WAP	
16.	The definition of Fingerprint Analysis does not match the definition provided in Section 2.4, which indicates chemical screening only.	
17.	Provide a more detailed definition of Quality Assurance/Quality Control.	
Chapter 1		
18.	Section 1.1 – Add a discussion of activities which generate waste, describe the waste profile system (Waste Stream Face Sheets (WSFS)), and identify operating conditions and process constraints.	
19.	Ancillary equipment is not addressed in the WAP, the ancillary equipment needs to be added to applicable discussions.	
20.	Second paragraph - Update this paragraph as necessary to reflect the new tank upgrades.	
21.	Third paragraph references Figure 1-2, however, the appropriate label is not included on the figure. Please correct figure.	

22.	Fourth paragraph references Figure 1-2, this is an incorrect reference, Room 2-B is not shown on this figure.	
23.	Include a discussion of how waste is moved from one area to another, and managed in each area.	
24.	Section 1-2 – add approximate quantity (%) information to the categories of waste managed in 222-S.	
25.	The list of prohibited material seems incomplete. Shouldn't cyanides, sulfides, lead, asbestos, organics, PCBs be added to the list?	
26.	In Sections 1.2.1 through 1.2.4, include treatment/management descriptions and identify operating conditions and process constraints.	
27.	Section 1.2.1 does not include all listed waste identified on the 222-S Part A, Form 3, Rev 7. Please correct.	
28.	Section 1.2.1, third paragraph – change "waste management units might be performed" to "waste management units will be performed."	
29.	Change "responsible for specifying the characteristics of the waste" to "responsible for characterization of the waste."	
30.	Same sentence, add "and data gathered from sampling and analysis of the waste."	
31.	Delete third sentence "Arrangements could be made between the organization generating the waste and 222-S personnel to obtain the necessary characterization information while the waste is being managed within the 222-S waste management units as long as the waste is characterized for storage before acceptance."	
32.	Add "Off-site waste will be fully characterized and documented prior to acceptance at the 222-S Facility."	
33.	Section 1.2.1, last paragraph – Waste not meeting the acceptance criteria of the 219-S Waste Handling Facility is packaged and managed in the container storage areas. Please provide the acceptance criteria for the 219-S.	
34.	Section 1.2.2 – Which samples and treatability studies are included in this Section's exemption? If the intention of this Section is to allow for the acceptance of Non-Hanford analytical work, a much more detailed discussion is necessary.	

35.	Section 1.2.4 – add a discussion of how these wastes are classified, treated, and managed.	
36.	Section 1.2 overall – should include a detailed discussion of the WSFS and their application in the WAP.	
37.	Figure 1-2, eliminate inset, and enlarge applicable portion of figure.	
38.	Since the WAP is a stand-alone document, there needs to be a map showing the locations of the 219-S Treatment, Storage and Disposal (TSD) facilities.	
39.	Figure 1-3. Flow chart seems to be the most applicable to waste being accepted into the 219-S Waste Handling System. Suggest making three flow charts, one for the 219-S Waste Handling System, a second for the 222-S Dangerous and Mixed Waste Storage Area, and a third for room 2-B. On each flow chart address how 222-S generated waste and non-222-S generated waste is handled. The top decision box refers to acceptable "Data," please provide a thorough description in the text.	
Chapter 2		
40.	Section 2.0, first sentence – change "on" to "of" and insert dangerous waste characterization before initial.... Delete second, third, and fourth sentences. Off-site generators must provide characterization information prior to shipment.	
41.	Third paragraph – There is a reference to "TSD-unit specific governing documentation," the WAP is a stand-alone document, please reiterate the pertinent Section of this governing document.	
42.	Section 2.1, first paragraph, first sentence – change "analysis of waste being received into 222-S...." to "analysis of waste being shipped to 222-S....," and change second sentence "initial acceptance of waste..." to "initial shipment of waste..."	
43.	Fifth bullet – at the end of the sentence add "and waste will be either accepted or rejected."	
44.	Second paragraph third and fourth sentences – modify sentences, waste will be identified as ignitable, reactive, or incompatible prior to shipment and acceptance at 222-S.	

45.	Second paragraph – Provide a more detailed discussion of ignitable, reactive, and incompatible waste management. Providing the Washington Administrative Code (WAC) reference is not adequate.	
46.	Modify the remainder of Section 2.1 so the pre-shipment review and all documentation is complete and acceptable prior to waste being shipped to, or accepted at the 222-S.	
47.	Section 2.2 states that waste verification is not conducted on hot cell waste destined for the 219-S Waste Handling Facility and laboratory instrumentation hard piped into the ancillary equipment of the 219-S Waste Handling Facility. How is this waste verified, and how is the quantity determined, and how will it be documented?	
48.	Section 2.2.1, second sentence – delete “at any one of the three locations described in Section 2.2” and add, “when the container arrives at 222-S.”	
49.	First paragraph – item number four “(4) is complete,” please elaborate.	
50.	Second paragraph – Containers should be verified prior to entry into the hot cells and ICP waste should be documented on the WSFS, add descriptions of these processes.	
51.	Third paragraph – Delete second, third, and fourth sentences. Add “Waste will not be accepted until the discrepancy is resolved.”	
52.	Section 2.2.2, first paragraph – please verify consistent terminology between the permit application and appendix 3A (i.e., container storage units should be 222-S Dangerous and Mixed Waste Storage Area).	
53.	Last sentence – explain why 222-S personnel are considered as independent authorized agents from the organization generating the waste.	
54.	Second paragraph – This Section should include a discussion of how waste generated in the 222-S Labs is verified, including testing of the lab waste to ensure the WSFS are accurate. Also, include the maintenance of the logbook, referencing each addition to the 219-S tanks by lab procedure #, date, person placing the waste in the tank, and notation of any discrepancies. This is a description of processes already in place.	
55.	Last sentence – delete “generally.”	
56.	Third paragraph – delete second and third sentences.	

57.	Section 2.2.3, first paragraph – again, address why 222-S personnel are considered as independent authorized agents from the organization generating the waste.	
58.	Include a discussion of, and schedule for WSFS verification. Address how the waste in the hot cells is logged into the 219-S Waste Handling System.	
59.	Second paragraph, last sentence – delete “generally.”	
60.	Third paragraph, last sentence – at the end of the sentence add “at 222-S.”	
61.	Section 2.2.3, overall – add a discussion of lab packs. All lab packs must be opened and inspected with 10% of the contents verified.	
62.	Section 2.3, overall – add description of how containers inspected by NDE will be opened to ensure the NDE equipment is functioning appropriately.	
63.	Section 2.3.1, overall – A more thorough discussion of Quality Control should be provided. Need more specifics than “appropriate training,” “Manufacturer’s instructions,” “site-specific protocol,” and “handled appropriately.” The WAP is a stand alone document, so reiterate pertinent information as applicable.	
64.	Section 2.4 - it is Ecology’s understanding that waste is isolated, if it contains PCB’s. Include the PCB management plan and a description of screening performed.	
65.	Section 2.4 – should include a description of the equipment which will be used for screening (e.g., pH paper, meter, etc.).	
66.	Section 2.4.1, first bullet - please define “lot.”	
67.	Third bullet – again, a more thorough discussion of quality control is needed. Provide more detail for “manufacturer’s instructions” and “site-specific protocols.”	
68.	Section 2.4.1, overall -- address standards, controls, and blanks in the Quality Assurance/Quality Control (QA/QC) program.	
69.	Section 2.4.2 – Sections 2.2.2 and 2.2.3 have already stated that “physical and chemical screening is not performed on waste generated in 222-S and packaged by 222-S personnel.” So the purpose of this Section is to minimize the chemical screening for waste generated outside the 222-S. A more conservative approach should be taken. Delete the first bullet. From the second bullet delete “or products traceable back to the original product container” and for the remaining bullets explain why 222-S is accepting these items from off-site facilities.	
70.	Section 2.5 – Suggest deleting this Section and referencing Chapter 4.0.	

Chapter 3

71.	First paragraph, first sentence – add reference to 40 CFR 264, and change WAC reference to “WAC 173-303-300” since all Sections are applicable.	
72.	Second sentence – make the following addition “When characterization information must be supplemented <i>or verified</i> , sampling....”	
73.	Last sentence – make the following additions and deletions “Information obtained while waste is being managed in 222-S waste management units <i>may be necessary</i> is because of requirements imposed on the waste for subsequent treatment,.....”	
74.	Second paragraph, last sentence – “Other sampling and analysis parameters are described in Section 3.3.” Define when these other parameters will be used.	
75.	Section 3.1, item (1), rationale – Make the following additions and deletions “....consistency between waste containers, and the accompanying shipment documentation, <i>and pre-shipment profile.</i> ”	
76.	Method – make the following additions and deletions “Visual observations are compared with the applicable <i>pre-shipment</i> profile information and the containers’ specific information <i>shipping</i> documentation.”	
77.	Criteria – make the following modifications to item (d) “variability greater than 25 <i>10</i> percent by volume in waste stream components (e.g., paper, plastic, cloth, metal). Provide information as to why 222-S is accepting paper, plastic, cloth, and metal waste streams from other facilities.	
78.	Item (2), rationale, last sentence - Please define “facility availability.”	
79.	Where will NDE be conducted, does 222-S have the equipment to conduct this type of evaluation?	
80.	Method, last sentence – insert the following words “...to the contents listed in <i>waste container</i> documentation.”	
81.	Criteria – make the following modifications to item (d) “variability greater than 25 <i>10</i> percent by volume in waste stream components (e.g., paper, plastic, cloth, metal).” Once again, why is this material being accepted into 222-S?	
82.	Section 3.2 – Why isn’t ignitability used as a screening parameter?	

83.	Item (1) – What is the purpose of pH testing solids? Using pH paper with a sensitivity of +/- 1.0 pH unit is not acceptable for waste with a pH near 2 or 12.5. A more sensitive method needs to be used.	
84.	Item (3) How are semi-solids tested? Modify the last sentence as follows: "A positive indication in a waste that cannot be explained by documented <i>that a waste is an oxidizer, not documented by the pre-shipment profile,</i> constituents constitutes failure.	
85.	Items (4), (5), and (6). Please reword Tolerance. Any deviations from the pre-shipment profile and generator characterization should be considered a failure.	
86.	Section 3.3 specified methods appear to be used for DST transfer, why aren't these parameters used as acceptance criteria for off-site waste?	
87.	Item (7), tolerance – please explain "The method is +/- 6.0 E-3 molar."	
88.	Item (8), rationale – please define "significantly lower than 1."	
89.	Chapter 3.0, overall – this chapter specifically addresses waste accepted into the 222-S facility. What will be done to characterize the waste leaving 222-S (e.g., to CWC or off-site disposal facilities).	
90.	Chapter 3.0, overall – provide more justification why 222-S generated waste will not require verification. Utilize WSFS, how often they will be re-evaluated, and the use of this documentation. This is another place where testing of 222-S generated waste should be addressed (refer to comment on Section 2.2.2).	
91.	Table 3-1 – Analytical parameters listed on 3-1 should be used as waste acceptance criteria if these parameters limit the transfer of waste to the DST System.	
92.	Table 3-1 - The TOC test is only a screening tool and cannot be used for waste designation and Land Disposal Restrictions (LDR) requirements as stated in the rationale for analysis. Please provide further explanation.	
93.	Some of the Section 3.2 parameters are listed on table 3-1 and others are not, be consistent, or provide an explanation.	
Chapter 4		
94.	This chapter should be applicable to the chemical sampling and analysis used for verification purposes. Please add this application to the introductory statement.	
95.	First paragraph, last sentence – please provide references to "other pertinent references published and accepted by the EPA."	

96.	Second paragraph – suggest deleting paragraph. The sampling for verification is inadequately discussed in Section 2.5, information provided in this chapter is also applicable to verification activities.	
97.	Section 4.1 and 4.2 – add a table similar to Table 4-1 showing sampling containers and preservatives. Insert applicable language from HASQARD to ensure proper preservation and record keeping.	
98.	Section 4.3, first paragraph – need to add reference to SW-846 for sampling methods. Reconcile this paragraph description with Table 4-1, specifically the equipment listed in the third column.	
99.	Second paragraph, first sentence – the statement “determined on a case-by-case basis by 222-S personnel” implies subjective sampling. This should be proceduralized to eliminate subjectiveness.	
100.	Third sentence - change “acquire” to “collect.”	
101.	Last sentence – Define the Data Quality Objectives (DQOs) and describe how the number of samples required for the DQOs are calculated.	
102.	Section 4.3, overall - Special note of sampling for Volatile Organic liquids should be explained here.	
103.	Section 4.4 should include the following bullets: <ul style="list-style-type: none"> • Evaluation of pre-shipment documentation • Labeling protocol • Preservation of samples • Field QA/QC samples • Reuse of sampling equipment Each bullet should include a discussion of how these assure quality.	
104.	First bullet – define “standard industrial practices.”	
105.	Fifth bullet – define “alterations.”	
106.	Section 4.4 should address the decontamination and maintenance of sampling equipment. The limitations of sampling equipment and analytical methods should also be discussed (e.g., high rad samples).	
Chapter 5		
107.	First paragraph – Provide a list of the “performance standards” described in policies maintained and used at 222-S. Explain why the QA/QC requirements in SW-846 and the HASQARD are not used.	

108.	Section 5.1, first paragraph, last sentence – add "...a person who is thoroughly familiar and trained with sampling protocols."	
109.	Section 5.2 - This Section on the analytical program is inadequate. Is this a reference to the HASQARD document? A Laboratory QAP should be referenced or included in the WAP for all laboratories used in the waste analyses.	
110.	Section 5.2 – Provide a thorough description of the "analytical QC practices and procedures" developed on the Hanford Facility. Reiterate information as necessary. In addition, address: <ul style="list-style-type: none"> • reagents/stock solutions • cleaning of test equipment • instrument checks • QC samples • Individual analytical procedure QA (i.e., precision, method detection limits, etc.). 	
111.	Chapter 5, overall – Discuss analytical methods used. Address potential deviations from standard procedures. Address how deviations will be documented. Identify applicable decision levels and provide rationale for level, or a regulatory reference.	
Chapter 6		
112.	Describe what criteria would trigger the re-evaluation of a waste profile.	
113.	This Section should address re-evaluation of the WSFS, and analytical verification.	
114.	Address re-evaluation frequencies for each generating source sending waste to 222-S.	
Chapter 7		
115.	Section 7.1 – this Section should address the procedures for accepting all waste from all generators. Discuss pre-shipment documentation and differences in verification frequencies.	
116.	Section 7.2, second bullet – describe what analytical methods will be used. How will these wastes be handled at 222-S, be specific.	
117.	Section 7.3, second paragraph, first sentence – insert "knowledge and/or testing."	
118.	Second sentence needs to be clarified. Process knowledge should be provided on the pre-shipment documentation. The generator must make LDR certification, not 222-S.	

119.	The last sentence includes the statement "provided that impermissible dilution does not occur," please provide a discussion detailing how "impermissible dilution" will be prevented at the 222-S facility.	
120.	Third paragraph – Change the WAC reference to WAC 173-303-380(1), the entire reference is applicable since current disposal routes may change over time.	
121.	Section 7.3, overall – there needs to be a distinction between the 222-S waste management units. Some waste is coming into the 219-S tanks. Other waste is going out through the Dangerous and Mixed Waste Handling Facility. In any event, the generator is required to prepare the LDR certification, not 222-S personnel.	
122.	Section 7.3.1, first paragraph – Describe how TRU waste is handled.	
123.	Third paragraph – Provide a detailed description of the treatment of state-only extremely hazardous waste.	
124.	First bullet – provide details on how controlled reactions are conducted.	
125.	Fourth bullet – Provide additional detail on compliance with WAC 173-303-140(4)(a) requirements.	
126.	Fourth paragraph, first sentence – add the following "....is collected and analyzed on each batch..."	
127.	Section 7.3.2 – this Section commits to using "only EPA or equivalent methods" for sample analysis. With As Low As Reasonably Achievable (ALARA) concerns, won't there be deviation from published procedures? How will these deviations be documented?	
128.	Section 7.3.3 – certification is also required for waste not meeting LDR standards. Address how these certifications will be handled.	
Chapter 8		
129.	The WAP is a stand-alone document. Please reiterate the pertinent requirements for record keeping.	